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APPLICANT : SUMITOMO ELECTRIC IND LTD;

INVENTOR : TAKEDA YOSHINOBU;

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TITLE : COMPOSITE REINFORCED ALLOY AND ITS MANUFACTURE

ABSTRACT : PURPOSE: To manufacture the novel composite reinforced alloy having high strength by incorporating carbon fiber having specified diameter and content into an oxide dispersion strengthened alloy contg. specified ratio of oxide grains having specified size distribution.

CONSTITUTION: By weight, 0.3 to 5% oxide powder (Y_2O_3 , Al_2O_3 or their conjugate oxide) having the size distribution of ≤ 0.4 diameter in ≥ 20 vol.% is incorporated into a matrix (Ni alloy, pure Cu, Al alloy or Ti alloy) by a mechanical alloying method to manufacture mechanically alloyed powder. The mechanically alloyed powder is mixed with 3 to 35vol.% fiber having $\geq 10\mu$ diameter of carbon fiber, silicon carbide whisker, silicon nitride whisker or that of which B or B_2C is chemically vapor-deposited onto the above, which is subjected to hot extruding at the temp. of the 1/2 or above of the m.p. of the mechanically alloyed powder. In this way, the novel composite reinforced alloy having high strength and suitable for manufacturing high function parts can be obtd.

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